REMARKS

STATUS OF THE CLAIMS:

Claims 1-28 are pending.

Claims 1-28 are rejected

Claims 1-2, 9-11, 18-20 and 27-28 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Applicants Admitted Prior Art, hereinafter referred to as "AAPA," in view of Coates et al., U.S. Patent No. 6,694,389, hereinafter referred to as "Coates."

Claims 3-8, 12-17 and 21-26 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over AAPA, in view of Coates, in further view of Mizuno, U.S. Patent No. 6,922,743, hereinafter referred to as "Mizuno."

In accordance with the foregoing, the claims are amended, and, thus, the pending claims remain for reconsideration, which is respectfully requested.

No new matter had been added.

The Examiner's rejections are respectfully traversed.

35 U.S.C. §103(a) REJECTION:

Independent claims 1, 10, 19 and 28 are allegedly rejected over AAPA in view of Coates.

In accordance with the foregoing, claim 1, for example, is amended to recite, in part: "a controlling means, when an I/O process corresponding to one of said one or more control blocks managed in said reconnection queue is resumed, for controlling resumption of said I/O process in either a first system, system issuing a reconnection request to each of said paths belonging to the same path group one by one through said host interface module and requesting said host interface module to perform said I/O process using a path first successful in reconnection at the a point of time that the reconnection succeeds, or and a second system, system issuing concurrently or almost concurrently the reconnection request to said plural paths belonging to the same path group through said one or more host interface modules and requesting said host interface module to perform said I/O process using a path which first succeeds in the reconnection." Support for the claim amendment can be found in the specification, for example, at page 20, line 1 to page 22, line 25.

Applicants respectfully submit that the alleged AAPA fails to disclose the same. The Office Action, at page 6, line 5 to page 7, line 4, asserts that the AAPA discusses a "controlling

means ... for controlling resumption of said I/O process in **either** a first system ... **or** a second system" (emphasis added). Applicants respectfully disagree with the assertion, because the specification, at page 7, lines 5-26, discuss a conventional system which exclusively operates in only one of the two systems. Accordingly, Applicants respectfully submit that the alleged AAPA fails to disclose "a controlling means ... for controlling resumption of said I/O process in either a first system,system ... and a second system,system," because the alleged AAPA merely discusses discuss a conventional system which exclusively operates in only one of the two systems.

Furthermore, Applicants respectfully submit that a *prima facie* case of obviousness cannot be based upon the alleged AAPA and Coates, because there is no evidence that one skilled in the art could modify the alleged AAPA, Coates' data buffer, or any combination thereof to include the claimed "controlling means, when an I/O process corresponding to one of said one or more control blocks managed in said reconnection queue is resumed, for controlling resumption of said I/O process in either a first system,system issuing a reconnection request to each of said paths belonging to the same path group one by one through said host interface module and requesting said host interface module to perform said I/O process using a path first successful in reconnection at the a point of time that the reconnection succeeds, or and a second system,system issuing concurrently or almost concurrently the reconnection request to said plural paths belonging to the same path group through said one or more host interface modules and requesting said host interface module to perform said I/O process using a path which first succeeds in the reconnection," as recited, for example, in claim 1, because the alleged AAPA merely discusses a conventional system which exclusively operates in only one of the two systems and Coates' data buffer is silent on "controlling means ... for controlling resumption of said I/O process."

Further, the Office Action, in Response to Arguments at item 3, asserts:

> AAPA teaches reconnection queue for enqueuing control blocks storing reconnection information on one or more input/output request (Specification, p. 5, ll. 5-16 and p. 9, ll. 5-16), wherein the enqueued I/O requests are issued for reconnection and each I/O request is controlled and regulated in order to obtain reconnection success; therefore, there is a queue of control blocks with reconnection information associated with the queue of I/O requests waiting for reconnection.

The Office Action appears to be asserting that because "each I/O request is controlled and regulated in order to obtain reconnection success," the Specification, p. 5, ll. 5-16 and p. 9,

ll. 5-16 discloses the claimed "a reconnection queue for enqueuing control blocks storing reconnection information on one or more input/output requests among input/output requests from said channels of said host, and managing said enqueued control blocks." Further, the Office Action, at item 8, asserts "wherein the enqueued I/O requests are issued for reconnection and each I/O request is controlled and regulated in order to obtain reconnection success; therefore, it would be obvious to include the queue of control blocks with reconnection information associated with the queue of I/O requests waiting for reconnection."

Applicants respectfully disagree with the assertions as understood. The Specification, at page 5, line 9 to page 6, line 11 discusses a reconnection operation. Specifically, the Specification at page 5, lines 9-15 states:

> Now, description will be made of a known reconnection
> operation with reference to a sequence diagram shown in FIG. 7.
> First, the I/O request (for example, a data read-out request) is
> notified from the channel (CH) 4a of the host 4 to the management
> module 30 via the host interface module 20 (refer to arrows A11
> and A12).

In other words, the Specification describes that an I/O request is sent to the management module 30 via the host interface module 20. Accordingly, Applicants respectfully submit that the Specification, at page 5, lines 9-15, fails to expressly disclose the claimed "reconnection queue for enqueuing control blocks storing reconnection information on one or more input/output requests among input/output requests from said channels of said host, and managing said enqueued control blocks," because the specification, at page 5, lines 9-15, merely discusses that a I/O request is sent to the management module. Furthermore, Applicants respectfully request that the Specification, at page 5, lines 9-15, fails to implicitly disclose the claimed "reconnection queue for **enqueuing control blocks storing reconnection information on one or more input/output requests** among input/output requests from said channels of said host, and **managing said enqueued control blocks**," because there is no evidence that one skilled in the art would modify either of the conventional systems to provide a queue for enqueuing "control blocks storing reconnection information on one or more input/output requests" and a monitor for "monitoring the number of said enqueued control blocks in said reconnection queue," because the conventional system issued the reconnection requests in only one of a one-by-one mode or a scattering mode. In contrast, the embodiment monitors the reconnection queue of control blocks with reconnection information and "dynamically switching the system to be executed by said controlling means to either said first system or said second system according to the number of the enqueued control blocks monitored by said monitoring means."

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Furthermore, the Specification at page 9, lines 5-16, cited by the Examiner, recites:

> In the first system in which the reconnection request is issued one by one, the I/O processing time is prolonged when a number of I/O requests waiting for reconnection are present in the storage controlling apparatus 3. When the start of the I/O process and the reconnection request occur at the same time in such situation, the I/O processing time is largely prolonged (occurrence of subduction phenomenon).
>
> When a number of I/O requests waiting for reconnection are present in the storage controlling ...

In other words, the Specification at page 9, lines 5-16 discusses that there may be more than one I/O request waiting for reconnection. However Applicants respectfully submit that the Specification at page 9, lines 5-16, fails to disclose, either expressly or implicitly, the claimed "reconnection queue for **enqueuing control blocks storing reconnection information on one or more input/output requests** among input/output requests from said channels of said host, and **managing said enqueued control blocks**," because the Specification at page 9, lines 5-16 merely discusses that there may be more than one I/O request waiting for reconnection and in a conventional system, there is no apparent need for "enqueuing control blocks storing reconnection information" when the I/O requests are waiting for one by one reconnection.

The Office Action, in Response to Arguments at item 4, asserts: "Coates teaches the dynamically switching of the system according to the number of enqueued buffer data (e.g. control blocks) (Fig. 5, col. 3, ll. 36-50 and col. 11, ll. 21-32)." Applicants respectfully disagree with the assertion.

Coates, at column 3, lines 36-50 discusses:

> FIG. 5 illustrates the operation of one embodiment of a flow controller. At step 500, **it is determined whether the fullness of the buffer is above an upper threshold**. If the fullness is not above an upper threshold, the process moves to step 530. If the fullness is above an upper threshold, at step 510, the **buffer signals the data producer to decrease its transfer rate**. At step 520, the buffer signals the data receiver to increase its transfer rate and the process moves to step 530. At step 530, **it is determined whether the fullness of the buffer is below a lower threshold**. If the fullness is not below a lower threshold, the process moves to step 500. If the fullness is below a lower threshold, at step 540, **the buffer signals the data receiver to decrease its transfer rate**. At step 550, the buffer signals the data producer to increase its transfer rate and the process moves to step 500.

In other words, Coates discusses monitoring whether the fullness of a buffer is above or below a certain threshold and controlling the transfer rate based on the monitoring. Accordingly, Applicants respectfully submit that Coates fails to disclose the claimed "reconnection queue for **enqueuing control blocks storing reconnection information on one or more input/output requests** among input/output requests from said channels of said host, and **managing said enqueued control blocks**," because Coatess merely discusses a data buffer. That is, Applicants respectfully submit that the "data" of Coates does not disclose, either expressly or implicitly, the claimed "control blocks storing reconnection information."

Furthermore, Applicants respectfully submit that Coates fails to disclose the claimed " "**dynamically switching** the system to be executed by said controlling means to either said first system or said second system **according to the number of the enqueued control blocks** monitored by said monitoring means," because, as discussed above, Coates fails to disclose the claimed "control blocks."

Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness cannot be based upon the alleged AAPA and Coates, because the alleged AAPA and Coates, and any combination thereof, fails to disclose, either expressly or implicitly, the claimed "control blocks storing reconnection information on one or more input/output requests," as recited, for example, in claim 1. That is, Applicants respectfully submit that there is no evidence that one of ordinary skill in the art would modify the alleged AAPA, Coates or any combination of the alleged AAPA and Coates to include the claimed "a reconnection queue for **enqueuing control blocks storing reconnection information on one or more input/output requests** among input/output requests from said channels of said host, and managing said enqueued control blocks ... and a switching means for dynamically switching the system to be executed by said controlling means to either said first system or said second system **according to the number of the enqueued control blocks** monitored by said monitoring means," because the alleged AAPA and Coates fail to disclose the claimed "control blocks."

Furthermore, Applicants respectfully submit that independent claims 10, 19 and 28 patentably distinguish over the cited references for similar reasons.

Dependent claims recite patentably distinguishing features of their own or are at least patentably distinguishing due to their dependence from the independent claims. Withdrawal of the rejection of pending claims, and allowance of pending claims is respectfully requested.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: __November 16, 2007__   By: _____

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